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EXAMINER

ZIMMER, MARC S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/673,903

Applicant(s)

BIER ET AL.

Examiner

Marc S. Zimmer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 16-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-12, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 1-15 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-15, drawn to a method of making a composition, classified in class 528, subclass 39.
- II. Claims 16-20, drawn to a <sup>4</sup>multilayered article, classified in class 428, subclass 447.
- III. Claims 21-26, drawn to a process of making a multilayered article, classified in class 427, subclass 387.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II and I and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). The multilayered article contemplated by the product claims of group II and the process claims of group III require the application of a composition comprising an epoxy-functional silane not mandated by the processes of group I. Likewise, the processes of group I rely on the hydrolysis of a metal compound devoid of organic substituents not even mentioned in the product/processes of groups II and III.

Inventions II and III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process

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(MPEP § 806.05(f)). In the instant case, a process of making the products of group II might instead entail the complete curing of the scratch-resistant layer prior to application of the top layer.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Groups II and III, restriction for examination purposes as indicated is proper.

During a telephone conversation with Jim Franks on November 19, 2004 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 16-26 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

#### ***Claim Objections***

Claims 1-15 are objected to because the Examiner is not familiar with the central metal element VO.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 6-8, 10-12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Wright, U.S. patent # 5,591,380. Wright discloses the preparation of alumina/silica sol mixtures that are used as protective coatings for substrates.. Particularly relevant to the rejection is the method outlined in Example 1. Therein, they disclose the separate preparation of alumina and silica sols after which said sols are combined to arrive at the mixtures/compositions mentioned in the title of the document. The alumina sol is prepared by adding a solution of 1.4 moles of aluminum tris(sec-butoxide) to 2-butanol. Thereafter, the solution is metered into 138.8 moles of water, or 33 times the amount needed to hydrolyze the  $1.4(3) = 4.2$  moles of hydrolyzable groups contributed by the aluminum alkoxide. The silica sol was prepared in ethyl alcohol by adding sufficient water to hydrolyze every equivalent of hydrolyzable group contributed by TEOS (1 mol of water for every 0.25 mol of TEOS and TEOS has 4 hydrolyzable groups per molecule). See column 6, lines 38-40.

As for claim 12, this further limited an embodiment of the claimed invention that did not represent the Examiner's grounds for rejection.

Claims 1-2, 4, 6-7, 10-12, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Lampin et al., U.S. patent # 4,485,130. Lampin discloses the preparation

of protective coating compositions. Descriptions of the synthetic approach taken for preparing the specific compositions that embody their invention are outlined in the examples. See, for instance, example 1. Therein, it is contemplated that 3.58 moles of methyltrimethoxysilane contributing  $3.58(3) = 10.75$  moles of hydrolyzable groups and 0.68 moles of TEOS contributing 2.73 moles of hydrolyzable groups are hydrolyzed in a solution that includes n-butanol, 50 g of glacial acetic acid, and 13.77 moles of water, or approximately 1.02 moles of water for every mol of hydrolyzable group in the formulation. The system would inherently possess a pH in the range stipulated by claim 4 by virtue of Lampin's utilization of acetic acid as a hydrolysis catalyst.

It is noted that, whereas the Examples recite the utilization of methyltrimethoxysilane, Applicant claims methyltriethoxysilane in claim 12. Elsewhere in the reference, methyltriethoxysilane is identified as an alternative to methyltrimethoxysilane and the skilled artisan will appreciate that they are functional equivalents.

Claims 1-7, 10-12, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Jin et al., U.S. patent # 6,607,590. Jin discloses protective coatings for a number of substrates including those set forth in column 1, lines 10-21. They are prepared from coatings solutions (paragraph bridging columns 5 and 6) comprising 40-75 weight percent of tetraalkylorthosilicate, 20-45 weight percent of an epoxy-functional silane (column 8, lines 53-67 through column 9, lines 1-29) and 5-15 weight percent of a methacryl-functional silane (column 9, lines 30-39). The recommended total solids content of the solution is between 15 and 50% by weight (column 10, lines 16-17) with

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the balance of the composition being solvent (column 9, lines 48-52) of which 20-50% by weight is water. Hydrochloric acid is employed as a hydrolysis catalyst that keeps the system at a pH of between 3 and 6. General conditions for hydrolysis are outlined in column 6, lines 21-28.

In example 1, a coating is described wherein the solids are derived from the hydrolysis/polycondensation of 0.5 moles of tetraethyl orthosilicate, 0.191 moles of glycidoxypropyltrimethoxysilane, and 0.02 moles of methacryloxypropyltrimethoxysilane. Hydrolysis is carried out in a solution that includes approximately 2.4 moles of water, or approximately 1 mol of water for every mol of hydrolyzable group in the composition, in the presence of 2M HCl.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright, U.S. patent # 5,591,380, Lampin et al., U.S. patent # 4,485,130, and Jin, U.S. patent # 6,607,590. None of these documents expressly mention the incorporation of a flow control agent. Nonetheless, it is submitted that these adjuvants are widely exploited in the coatings and are, therefore, obvious. "It is prima facie obvious to add a known ingredient to a known composition for its known function." *In re Lindner* 173 USPQ 356; *In re Dial et al* 140 USPQ 244.

***Allowable Subject Matter***

Claims 9 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The references teach away from the level of dilution contemplated in claim 13 and the prior art did not appear to teach an anticipatory method that employed zinc alkoxide as a starting material. Applicant is advised however that many of the claimed features of the instant invention are disclosed repeatedly in the prior art and only these three references were cited for the sake of brevity.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 26, 2004

*Marc Zimmer*

*Marc Zimmer*

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